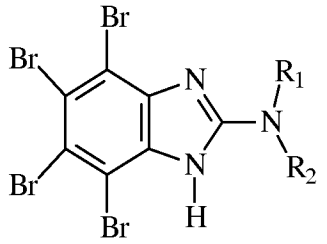
Amendment to the Claims:

The claim listing which begins on the next page will replace all prior versions, and listings, of claims in the application.

Claim Listing

1. (Presently amended) A new derivative of 4,5,6,7-tetrabromobenzimidazole of **Formula 1**



,

Formula 1

wherein

R_1 is a hydrogen or an aliphatic group; and

R_2 is an aliphatic group, optionally substituted with a substituent selected from a hydroxyl and a substituted amino group.

2. (Presently amended) The derivative according to Claim 1, which is 2-methylamino-4,5,6,7-tetrabromo-1H-benzimidazole.

3. (Presently amended) The derivative according to Claim 1, which is 2-dimethylamino-4,5,6,7-tetrabromo-1H-benzimidazole.

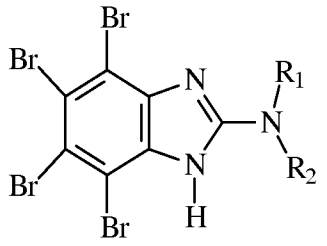
4. (Presently amended) The derivative according to Claim 1, which is 2-ethanolamino-4,5,6,7-tetrabromo-1H-benzimidazole.

5. (Presently amended) The derivative according to Claim 1, which is 2-isopropylamino-4,5,6,7-tetrabromo-1H-benzimidazole.

6. (Presently amended) The derivative according to Claim 1, which is 2-(2-hydroxypropylamino)-4,5,6,7-tetrabromo-1H-benzimidazole.

7. (Presently amended) The derivative according to Claim 1, which is 2-(2-dimethylaminoethylamino)-4,5,6,7-tetrabromo-1H-benzimidazole.

8. (Presently amended) A method of preparation of a new derivative of 4,5,6,7-tetrabromobenzimidazole of Formula 1



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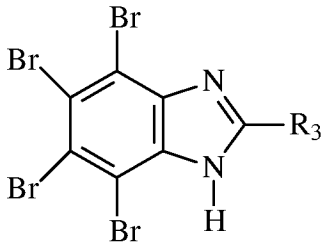
Formula 1

comprising

(a) reacting a compound of **Formula 2**



Formula 2

with an amine at an elevated temperature; and

(b) purifying the resulting product is purified by crystallization or silica gel chromatography

wherein

R_1 is a hydrogen or an aliphatic group;

R_2 is an aliphatic group, optionally substituted with a substituent selected from a hydroxyl and a substituted amino group; and

R_3 is a halogen, an alkylthio, an alkoxy, a sulfone or an alkylsulfoxide.

9. (Presently amended) The method of Claim 8, wherein R_3 is selected from the group -Cl, -Br, CH_3S-, C_2H_5S-, C_3H_7S-, CH_3O, and C_2H_5O-.

10. (Presently amended) The method according to Claim 8 wherein said amine is a primary lower aliphatic amine

11. (Presently amended) The method according to Claim 10 wherein said primary aliphatic amine includes in the aliphatic chain additionally hydroxyl groups or substituted amino groups.

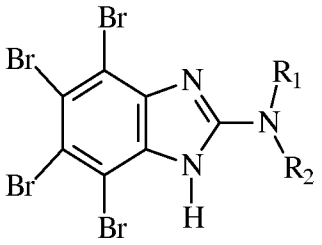
12. (Presently amended) The method according to Claim 8 wherein said amine is a secondary lower aliphatic amine.

13. (Presently amended) The method according to Claim 8 wherein said amine is used both as a reagent and as a co-solvent in an aqueous or alcoholic solution.

14. (Presently amended) The method according to Claim 8 wherein the reaction of said compound of Formula 2 with said amine is carried out at a temperature in the range between 80 to 140 °C.

15. (Cancelled)

16. (Presently amended) A pharmaceutical composition exhibiting an anti-neoplastic activity comprising a pharmaceutically-effective amount of a new derivative of 4,5,6,7-tetrabromobenzimidazole of **Formula 1**



Formula 1

and at least one inert, pharmaceutically acceptable carrier or diluent wherein

R_1 is a hydrogen or an aliphatic group; and

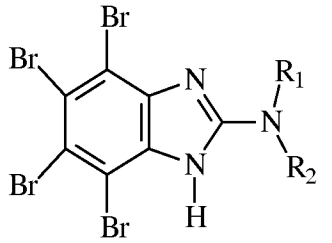
R_2 is an aliphatic group, optionally substituted with a substituent selected from a hydroxyl and a substituted amino group.

17. (Presently amended) The pharmaceutical composition of claim 16, wherein said new derivative of 4,5,6,7-tetrabromobenzimidazole of **Formula 1** is selected from the group consisting of 2-methylamino-4,5,6,7-tetrabromo-1H-benzimidazole; 2-dimethylamino-4,5,6,7-tetrabromo-1H-benzimidazole; 2-ethanolamino-4,5,6,7-tetrabromo-1H-benzimidazole; 2-isopropylamino-4,5,6,7-tetrabromo-1H-benzimidazole; and 2-isopropylamino-4,5,6,7-tetrabromo-1H-benzimidazole; 2-(2-hydroxypropylamino)-4,5,6,7-tetrabromo-1H-benzimidazole; and 2-(2-dimethylaminoethylamino)-4,5,6,7-tetrabromo-1H-benzimidazole.

18. (Cancelled)

19. (Cancelled)

20. (Presently amended) A method of inhibiting caseine kinase 2 activity in a patient in the need of such treatment comprising administering to said patient a pharmaceutically-effective amount of the compound of **Formula 1**



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Formula 1

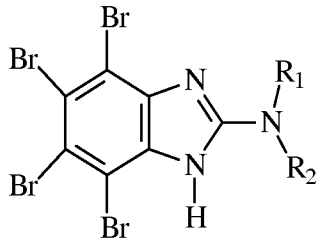
wherein

R_1 is a hydrogen or an aliphatic group; and

R_2 is an aliphatic group, optionally substituted with a substituent selected from a hydroxyl and a substituted amino group.

21. (Presently amended) The method of Claim 19, wherein said compound of **Formula 1** is selected from the group consisting of 2-methylamino-4,5,6,7-tetrabromo-1H-benzimidazole; 2-dimethylamino-4,5,6,7-tetrabromo-1H-benzimidazole; 2-ethanolamino-4,5,6,7-tetrabromo-1H-benzimidazole; 2-isopropylamino-4,5,6,7-tetrabromo-1H-benzimidazole; and 2-isopropylamino-4,5,6,7-tetrabromo-1H-benzimidazole; 2-(2-hydroxypropylamino)-4,5,6,7-tetrabromo-1H-benzimidazole; and 2-(2-dimethylaminoethylamino)-4,5,6,7-tetrabromo-1H-benzimidazole.

22. (New) A method of treating human leukemia in a patient in the need of such treatment comprising administering to said patient a pharmaceutically-effective amount of the compound of **Formula 1**



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Formula 1

wherein

R_1 is a hydrogen or an aliphatic group; and

R_2 is an aliphatic group, optionally substituted with a substituent selected from a hydroxyl and a substituted amino group.

23. (New) The method of Claim 21, wherein said compound of **Formula 1** is selected from the group consisting of 2-methylamino-4,5,6,7-tetrabromo-1H-benzimidazole; 2-dimethylamino-4,5,6,7-tetrabromo-1H-benzimidazole; 2-ethanolamino-4,5,6,7-tetrabromo-1H-benzimidazole; 2-isopropylamino-4,5,6,7-tetrabromo-1H-benzimidazole; and 2-isopropylamino-4,5,6,7-tetrabromo-1H-benzimidazole; 2-(2-hydroxypropylamino)-

4,5,6,7-tetrabromo-1H-benzimidazole; and 2-(2-dimethylaminoethylamino)-4,5,6,7-tetrabromo-1H-benzimidazole.